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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,283	04/10/2006	Bocang QIU	305832-00124	6702
64770 7590 09/04/2007 MOMKUS MCCLUSKEY MONROE MARSH & SPYRATOS, LLC 3051 OAK GROVE ROAD SUITE 220 DOWNERS GROVE, IL 60515-1181			EXAMINER ROJAS, OMAR R	
			ART UNIT 2874	PAPER NUMBER
			MAIL DATE 09/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/595,283

Applicant(s)

QIU, BOCANG

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04/04/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/25/2006, 09/19/2006</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> . |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The prior art documents submitted by applicant(s) in the Information Disclosure Statement(s) ("IDS") filed on 05/25/2006 and 09/19/2006 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Drawings

3. Figures 1, 2, 9, and 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without

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underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. The disclosure is objected to because of the following informalities: The specification lacks most of the section headings provided in 37 CFR 1.77(b).

Appropriate correction is required.

5. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

6. Claim 1 is objected to because of the following informalities: Claim 1 recites the limitation "the semiconductor material" in the last paragraph. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

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7. Claim 3 is objected to because of the following informalities: Claim 3 recites the limitation "20" in the second line. There is insufficient antecedent basis for this limitation in the claim and/or it appears to be a typographical error. Appropriate correction is required.
8. Claim 7 is objected to because of the following informalities: Claim 7 recites the limitation "the adjacent cladding layer" in the second line. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.
9. Claim 8 is objected to because of the following informalities: Claim 8 recites the limitation "the adjacent cladding layer" in the second line. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.
10. Claim 13 is objected to because of the following informalities: Claim 8 recites the limitation "the mode control layer" in the second line. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. **Claims 1-14, 17, and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Patent No. 4,745,612 to Hayakawa et al. ("Hayakawa").**

In re claim 1, Hayakawa discloses a semiconductor optical waveguiding device comprising:

a first cladding layer 1/2/3/4;

a second cladding layer 6/7/8/9; and

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a waveguiding layer 5 disposed between the first and second cladding layers and having a substantially higher refractive index than said first and second cladding layers;

wherein at least one of the first and second cladding layers includes a beam control layer 2/4/6/8 in which a property of the semiconductor material varies as a function of depth through the layer, the beam control layer including a first sub-layer 2/8 in which the property varies gradually from a first level to a second level, and a second sub-layer 4/6 in which the property varies gradually from said second level to a third level. Figure 1 of Hayakawa is reproduced below.

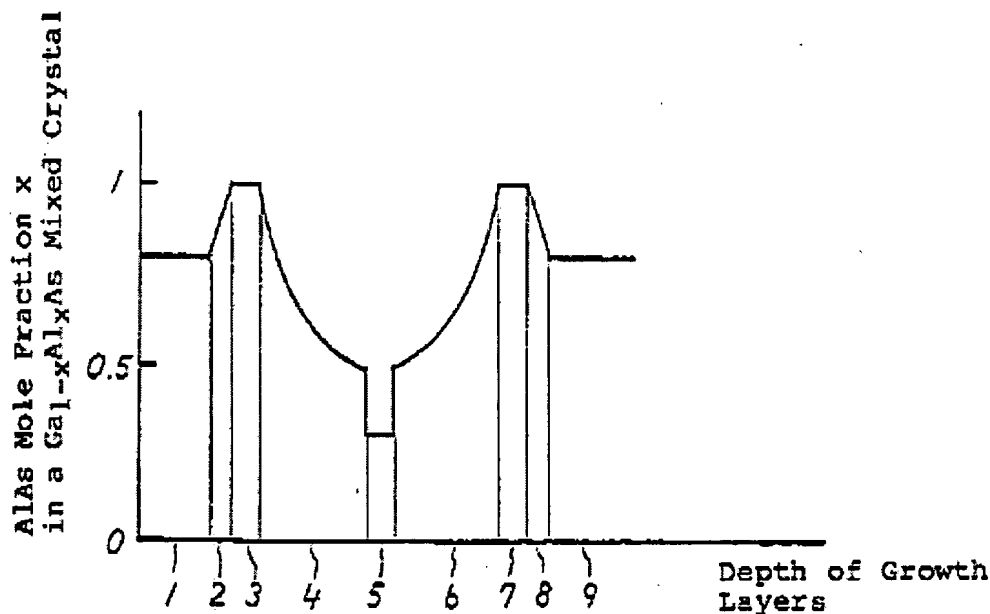


FIG. 1

In re claim 2-14 and 17, the additional limitations are further anticipated by Hayakawa's disclosure at column 3, line 23 to column 4, line 45 in view of the previous remarks.

In re claim 18, the specified method steps are inherently used to form the device of Hayakawa because the resulting product is the same.

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13. Claims 1-14 and 16-18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Patent No. 4,882,734 to Scifres et al. ("Scifres").

In re claim 1, Scifres discloses a semiconductor optical waveguiding device 80/88 comprising:

a first cladding layer 85/86 or 94/95 ;

a second cladding layer 83/84 or 92/93; and

a waveguiding layer 82 or 90 disposed between the first and second cladding layers and having a substantially higher refractive index than said first and second cladding layers;

wherein at least one of the first and second cladding layers includes a beam control layer 84/86 or 92/94 in which a property of the semiconductor material varies as a function of depth through the layer, the beam control layer including a first sub-layer in which the property varies gradually from a first level to a second level, and a second sub-layer in which the property varies gradually from said second level to a third level. Figures 7 and 8 of Scifres are reproduced below.

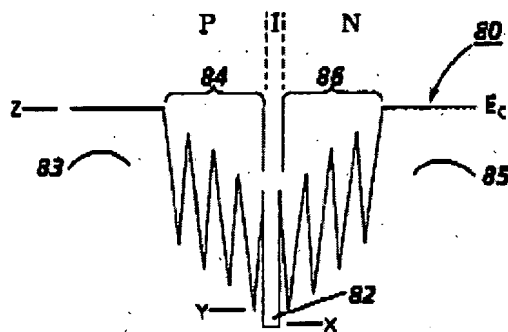


FIG. 7

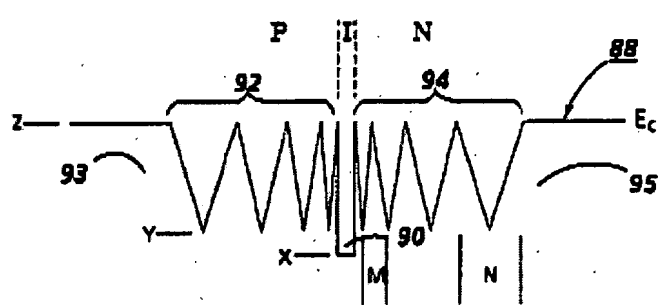


FIG. 8

In re claims 2-14 and 16-18, the additional limitations are further anticipated by Scifres's disclosure at column 4, lines 31-49; column 6 lines 28-69; and column 7, lines 1-24.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. **Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa or Scifres as applied to claim 1 above, and further in view of applicant's admitted prior art ("AAPA").**

In re claim 15, Hayakawa or Scifres only differ from claim 15 in that neither reference teaches a ridge waveguide. AAPA, however, as seen in Figure 1 of applicant's drawings, discloses a semiconductor device including a ridge waveguide 14. As mentioned in paragraph [03] of applicant's specification, ridge type lasers are conventional and useful for providing lateral optical confinement and electrical injection to drive the lasing mode. Such properties would have also been desirable for the laser devices of Hayakawa or Scifres. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 15 in view of Hayakawa or Scifres, and further in view of AAPA.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (9:00PM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number

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for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Omar Rojas/
Patent Examiner, Art Unit 2874

or
August 31, 2007